DISCLAIMER

The information presented in this manual is for is guidance in dissemination of Technologies, Innovations and Management Practices in FSRP counties

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CHAPTER 1 INTRODUCTION

1.1 Background

Kenya experiences several climate-induced disasters such as emergence of pests and diseases, floods and drought that affect food and nutrition security and consequently adverse effects on the socio-economic development of affected communities. Climate change is gradually increasing the level of risk faced by Kenya's agriculture sector causing undesired consequences to communities in affected areas, and therefore need mitigation. To mitigate the effects and risks caused by climate change, it is essential to build the capacities of farmers to manage the disasters and develop their resilience to hasten recovery from the calamities. However, successful capacity building and support to the farming communities will require trained public and private extension staff/agencies with relevant knowledge on adaptation strategies including modern climate smart agriculture technologies, innovations and management practices (CSA TIMPs) to promote resilience among farmers and pastoralists and to mitigate against the disasters.

This strategy provides a framework to guide stakeholders (KALRO, Counties) and all entities on the training of extension agents to promote the adaptation and dissemination of TIMPs. To achieve the project's objectives there is need for a strong effort to validate and disseminate CSA TIMPs through on-farm adaptations, demonstrations and trainings including the use of farmer field and business schools. The project has adopted the Training of Trainers (ToT) model to disseminate CSA TIMPs. The ToTs will refresh the knowledge and skills of extension support agencies on good agricultural practices (GAPs) including climate adaptations, breed and variety selection, soil nutrient management, feed production and conservation, range management, soil and water conservation, control of diseases and pests, post-harvest handling and value addition. ToTs will in turn train Lead Famers to advance the dissemination of TIMPs. To support the trainings, value chain based TIMPs inventories and ToT manuals will be developed and training materials/dissemination publications prepared and customized to respect target trainees at different training tiers. The Farmer/Pastoral Field and Business Schools approach and on-farm demonstrations will be promoted. These approaches are considered as effective participatory approaches for facilitation of adult learning processes and nurturing inclusive stakeholder partnership for sustainable up scaling of TIMPs.

To contribute further to the achievement of the project development goal, the support under Subcomponent 1.2 on Developing and Delivering Resilience-Enhancing Technologies and Services will entail:

(i) Development and delivery of climate-smart technologies and services to farmers. Climate-smart technologies and seed systems will help farmers increase productivity, enhance resilience, and reduce GHG emissions from agricultural practices.

(ii) Leveraging on the over 1,600 CSA TIMPs already developed by KALRO for their dissemination to farmers for adoption.

(iii) Promoting the use of participatory extension approaches such as Farmer Field and Business School (FFBS) and Pastoral Field and Business Schools (PFBS), and on-farm demonstrations for adoption of TIMPs and ownership by farmers.

(iv) Supporting KALRO to strengthen appropriate seed systems (for both crop and livestock) encompassing capacity building activities targeting various stakeholders; increasing and decentralizing the Mkulima Shops under KALRO Seeds to facilitate seed access by counties and other stakeholders; and production of locally adapted varieties and breeds. In addition, KALRO will increase the numbers of seed growers/breed multipliers recruited and build their capacities on seed/breed production; strengthen partnerships within the NARS and with CGIARs and other regional and global research organizations to address TIMPs development and seed systems activities.

The TIMPs will cover the project's priority value chains in livestock and crops. The livestock value chains are; - Red meat (sheep, goats, cattle); Leather; Dairy (camel, cattle, goats); Chicken (meat, eggs); Apiculture, and Aquaculture. The crops value chains are; - Sorghum; Cowpeas; Local vegetables; Potato; Sunflower; Tomato; Mango; Cashew; Cotton, Rice, Local vegetables, Beans, Simsim, Watermelon, Groundnut. The over 300,000 registered crop and livestock farmers supported under the project will largely include small-scale farmers. Furthermore, the project will benefit value chain actors at various levels including extension workers, aggregators, logistics support providers and small and medium enterprises (SMEs) operating within the value chain. The project will have a strong focus on addressing gender gaps to develop gender smart agriculture value chains through a range of integrated solutions

Goals, Objectives and Strategies

Goal

The goal of this strategy is to enhance effective and efficient dissemination of CSA TIMPs for increased adoption by farmers within the FSRP implementing counties.

Objectives

The overall objective of this strategy is to provide a roadmap for the dissemination of TIMPs to farmers at the CIG/VMG level within the FSRP implementing counties.

The strategy will be central in ensuring that appropriate and validated TIMPs are transferred to the farmers in order to address FSRP development objective of increasing preparedness against food insecurity and improving the resilience of food systems in targeted project areas of Kenya.

The specific objectives are:

i. To establish robust institutional linkages for TIMPs dissemination to the beneficiaries

ii. To catalyze adoption of TIMPs for increased production, productivity and resilience

iii. To enhance effective and sustainable extension service delivery to the farmers

iv. To enhance farmer education, research and innovation

CHAPTER 2 TIMPs DISSEMINATION APPROACHES

2.1 Introduction extension approaches

Extension approaches are various ways to work with farmers and their families to improve their lives. Extension can take many forms, including:

i) General agricultural extension

This approach involves sharing the latest knowledge, techniques, and best practices to help farmers and rural communities improve their agricultural productivity and livelihoods.

ii) Commodity specialized approach

This approach focuses on providing specialized extension services for specific agricultural commodities.

iii) Training and visit approach

This approach involves training farmers and then visiting them to offer personalized guidance and support.

iv) Participatory approach

This approach involves actively involving farmers and rural communities in the design, implementation, and evaluation of extension services. F/PFBS methodology falls under this category.

v) School approach

This method can be used to reach large numbers of people within a short time at minimal cost.

vi) Mass extension methods

These methods involve the use of the mass media to create awareness.The project will adopt a combination of the above extension approaches depending on the problems the approach is assumed to solve, the purpose it is designed to achieve, the management of the system, the nature of the field staff, the required resources, the techniques used for its implementation, and, the measures for evaluation.

2.2 Structures for dissemination

The hybrid extension system requires elaborate community institution structures. These may include CIGs / VMGs, lead farmers, CDDCs, F/PFBS, schools and learning institution's. The selection of lead farmers and their roles are presented in annex 1 and 2. The community institutional/structures' roles and linkages for TIMPs dissemination include:

Knowledge dissemination: Lead farmers play a crucial role in disseminating knowledge and supporting the implementation of improved agricultural practices at the grassroots level. Currently, Agripreneurs have been on boarded in the extension ecosystem through targeted

training programs that will equip them with essential skills in technology use for routine data collection, innovative agricultural practices, and business management.

Resilience promotion: In a Lead Farmer Extension model, building resilience in crop and livestock value chains will be key. Farmers will be encouraged to diversify their production by adopting drought-resistant crops and resilient livestock breeds, reducing vulnerability to climate shocks. Training on sustainable techniques, such as conservation farming and agro-forestry, ensures long-term productivity. Lead farmers learn risk management strategies, including crop and livestock insurance and efficient water use, to safeguard production. Peer networks facilitate the sharing of resilience tactics, while adaptive learning promotes innovation. Enhancing financial literacy and market access equips farmers to withstand economic pressures and develop resilient, profitable value chains.

The following are roles of the respective institutions:

a) Lead farmers

Training and mentorship: Lead farmers receive training from master trainers on methodologies and Technologies, Innovations, and Management Practices (TIMPs). They then use their own farms as demonstration sites, providing practical, hands-on training to their peers.

Networking: Being a resource person, the LF will acquire resources and build power by using or creating linkages between two or more individuals, groups, or organizations. This will spur mutual benefit and interaction that involves exchanging of ideas and information between individuals who are connected by a common career interest along the value chain. Networking can lead to opportunities for professional development like seminars, workshops, conferences, market access and professional information

b) Agripreneurs

Agripreneurs are engaged early in the project cycle to leverage their entrepreneurial skills in reaching out to targeted farmers. By linking farmers to markets, resources, and technologies, they significantly enhance the overall impact of extension services. Additionally, Agripreneurs are integrated into peer networks, enabling collaboration with lead farmers, sharing of experiences and access to resources that support and improve their entrepreneurial ventures in agriculture.

c) Common Interest Groups (CIGs)

CIGs serve as the primary link between project interventions and smallholder farmers. They play a crucial role in organizing training sessions, mobilizing resources, and facilitating the adoption of TIMPs. CIGs also manage the utilization of revolving funds for the adoption of new practices.

d) FFBS / PFBS Groups

The FFS methodology envisages weekly interactive learning sessions and practical activities in the host farm to aid the farmers in grasping the TIMPs at play. In the end, the farmers will become experts in their own fields / value chain.

e) Community Driven Development Committees (CDDCs):

The CCDCs function as ward-level representative institutions of CIGs, with elected leaders who represent beneficiaries in targeted communities. They are responsible for identifying vulnerable and marginalized community members through participatory targeting approaches, ensuring that project benefits and interventions reach everyone

2.3 Approaches for Dissemination

The dissemination will be achieved through a combination of digital platforms and traditional methods. Mobile apps, SMS services, and e-learning tools offer farmers real-time access to information on improved farming techniques, pest management, and climate-smart practices.

TIMPs will be promoted through field demonstrations, training sessions, and partnerships with extension officers. Public and private sector collaboration will ensure farmers adopt sustainable technologies, while farmer field schools and lead farmer models will help spread best management practices to rural communities.

2.3.1 Farmer/Pastoral Field and Business school

The FFBS approach is a participatory and experiential learning model aimed at empowering farmers by equipping them with practical knowledge and skills. Unlike traditional extension models, FFBS encourages farmers to learn through experimentation and observation, fostering a deeper understanding of agro-ecological principles and business management skills. The criteria for selection of FFBS groups, participants, learning/meeting sites and experimental sites / host farms are outline in annex 3

Key features of the FFBS

Participatory learning: Farmers engage in hands-on learning through group activities, field experiments, and collective problem-solving. This method encourages farmers to become experts on their own farms.

Group-based learning: Each FFBS consists of 25-30 farmers who meet regularly (weekly or bi-weekly) throughout the growing season. These meetings serve as platforms for learning and sharing experiences on various agricultural practices and technologies.

Post-training dynamics: After the formal training period, farmers are expected to continue meeting and exchanging knowledge, albeit with reduced involvement from extension agents. This self-sustaining model ensures continuous knowledge sharing and innovation at the community level.

Implementation phases:

Phase 1: Group formation and needs assessment

- Mobilize farmers interested in the FFBS approach and form groups based on common interests or value chains.
- Conduct a needs assessment to identify the specific training needs of the group, focusing on both technical and business aspects.

Phase 2: Training and capacity building

- Implement training sessions using participatory and experiential learning methods, covering both technical agricultural practices and basic business management skills.
- Establish demonstration plots where farmers can observe and practice new techniques, encouraging them to experiment on their own farms.

Phase 3: Post-training support and sustainability

- Provide ongoing support to farmer groups, including regular follow-up visits and additional training sessions as needed.
- Facilitate the development of farmer networks and associations to enhance collective action and market access.

For sustainability, the project will develop value-chain specific TIMPs short course curricula for continuous training of county technical teams and other agricultural value-chain actors.

Phase 4: Monitoring, evaluation, and scaling up

- Monitor and evaluate the performance of farmer groups and the adoption of new practices.
- Identify successful lead farmers to act as mentors for new groups, supporting the scaling-up of the FFBS model within and beyond the community.

The project will document value chain specific TIMPs lessons learned into integrated platforms such online platforms (web sites, repositories), radio and television programs, print media (manuals, guidelines, technical handbooks, newsletters, bulletins, banners, fliers, posters, brochures) and social media (blogs, newsfeeds).

Business skills integration

In addition to agricultural skills, the FFBS integrates basic business management principles to help farmers improve the economic viability of their farming activities.

Farmers are taught how to keep records of their farming activities, including costs, inputs and outputs. This helps them to track their profitability and make informed decisions about their

farming practices. Training includes basics of budgeting, planning and simple cost-benefit analysis, enabling farmers to better manage their resources and plan for future investments.

The FFBS encourages farmers to adopt a market-oriented approach to agriculture. This involves understanding market demands, quality requirements and compliance and consumer preferences, which allows farmers to align their production with market opportunities. Moreover, farmers are encouraged to explore value addition opportunities such as processing, packaging and branding to increase the value of their products. The programme helps farmers establish direct linkages with buyers, reducing reliance on intermediaries and improving their profit margins.

The FFBS promotes sustainable agricultural practices and community empowerment by building local capacities and fostering self-reliance. In FFBSs, farmers adapt and refine new practices to suit their local conditions, ensuring that innovations are relevant and effective in their specific contexts. After the formal training period, farmers continue to meet and exchange knowledge, fostering a culture of continuous learning and innovation within the community.

2.3.2 Leveraging multimedia and digital platforms

Leveraging multimedia and digital platforms in the Lead Farmer Extension model can enhance learning and communication by delivering diverse and accessible content to farmers. Visual platforms like e-learning modules, videos and TV programs can demonstrate best farming practices, while audio platforms such as radio and podcasts offer real-time updates and practical advice.

The use of radio combined with traditional (farm visits, field demonstrations, group training, printed materials such as brochures and manuals) and digital agricultural extension services, can effectively reach a wide audience, especially in rural areas. Radio can deliver timely agricultural advice, market updates and weather forecasts to farmers who may lack access to digital platforms. By aligning radio broadcasts with the lead farmers' trainings, a consistent flow of information is maintained. Digital tools like SMS, mobile apps, and voice messaging can complement radio by offering interactive communication, enabling farmers to ask questions or receive personalized advice. This blended approach maximizes outreach across different formats, ensuring farmers in both connected and remote area access relevant information through multiple channels ultimately improving their knowledge, decision-making, and agricultural productivity.

2.4 Stakeholder analysis

The project will interact with several stakeholders during dissemination of TIMPs. Their roles and engagement strategy are presented in Table 1.

Table 1: Stakeholder analysis

Stakeholder	Role	Power/ influence	Interest	Engagement Strategy
Farmers/CIGs/FFBSs	Primary users of CSA TIMPs	Moderate	High	Conduct workshops, field demonstrations.
Agricultural Extension Agents	Provide training and support to farmers	High	High	Training sessions, resource sharing.
Government Agencies	Policy makers and regulators in agriculture. Capacity development and technical assistance	High	High	Policy dialogues, collaborative projects.
AIRC	Development and production of agricultural information and communication material Dissemination of TIMPs through integrated platforms	High	High	Collect, process and share quality agricultural information and knowledge resources to the farming community and other stakeholders using integrated platforms
KSA	Agricultural training and outreach programs	High	High	Develop CSA TIMPs short course curricula and continuously train county-based TOTs
ATDCs	Agricultural training and technology transfer	High	High	Promote CSA TIMPs, incubate SMEs, mitigate and adopt to climate change, build

Stakeholder	Role	Power/ influence	Interest	Engagement Strategy
				capacity
NGOs and Civil Society	Focus on sustainable agriculture and rural development	Moderate	Moderate	Partnerships in outreach and education.
Research Institutions (RELOs, AMRI)	Conduct research on climate-smart practices	High	High	Collaborative research initiatives.
Private Sector (Agri-business/ VC actors/ Agtechs/ Agripreneurs)	Suppliers of agricultural inputs and services	High	High	Business forums, joint ventures.
Community Leaders	Linkages with communities and community mobilization	Moderate	Moderate	Engagement in community meetings.
Donors and Funding Agencies	Provide financial support for agricultural projects	High	High	Regular updates, impact reports.
Media	Raise awareness and disseminate information	Moderate	Moderate	Press releases, interviews, and articles.
Consumers	End-users of agricultural products.	Low	low	Feedback on products
Financial institutions	Provide credit	High	High	Develop tailored financial products that cater for farmers
Insurance service provider	Offer crop and livestock insurance to mitigate risks associated with climate change and market fluctuations	Low	low	Utilize agricultural data analytics to assess risks and make informed insurance decisions

CHAPTER 3 GUIDELINES FOR TIMPs DISSEMINATION

3.1 Introduction

Guidelines for TIMPs dissemination by the stakeholders are important as they provides a guide of the roles each stakeholder is expected to play for seamless, efficient and effective dissemination of TIMPs.

3.1.1 Prioritization of TIMPs to be disseminated

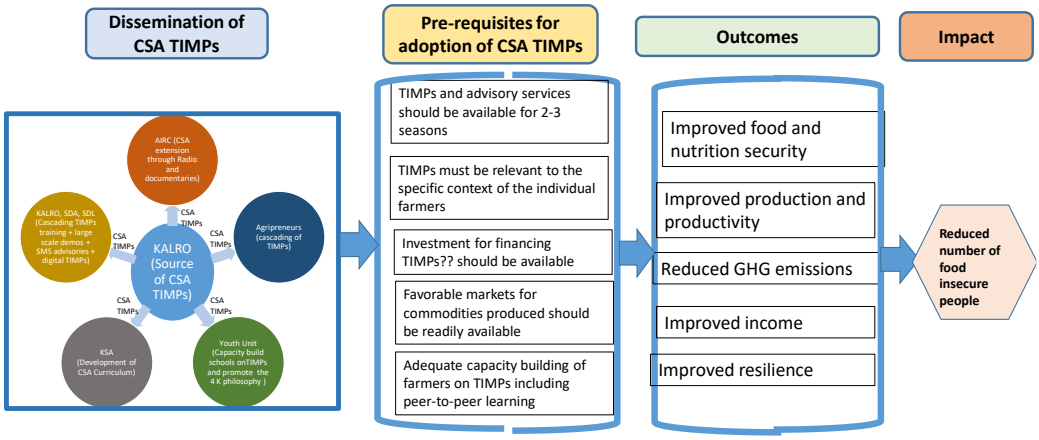
The prioritization of TIMPs that will be disseminated will entail a desk study to identify TIMPs that address constraints along the priority value chains identified by each of the counties. This will then be followed by engagement with each of the Counties to refine the TIMPs that address county specific value chain constraints (as identified in PICD reports). It is these TIMPs that will be disseminated to farmers within the respective counties. TIMPs with the highest potential for increasing productivity, profitability, climate resilience, and mitigation of GHG emissions will be prioritized. Other factors that will be considered in prioritizing the TIMPs to be disseminated include cost effectiveness of the TIMP and ease of application/use of the TIMP.

3.1.2 Dissemination approach

The project will adopt a hub and spoke approach for disseminating CSA TIMPs to farmers. (Figure 1). KALRO as the custodian of TIMPs is at the 'hub' and is at the center of all TIMPs related activities. AIRC, KSA, Agripreneurs, the Youth Unit, SDA, SDL and other KALRO Cenres are the spokes. They are recipients or organizations or departments of the Ministry of Agriculture that will receive TIMPs from the central "hub". Each of the 'spokes' will extend the relevant CSA TIMPs to the ultimate beneficiary-the farmer.

- AIRC will collate, process, repackage and share quality agricultural information and skill training to farmers and stakeholders thus contributing to food and nutritional security and enhancing farmers income. AIRC will package TIMPS dissemination material into appropriate formats to ensure easy uptake by farmers in tier 4 and also for dissemination through radio programmes
- Agripreneurs, SCTTs and WTTs will train lead farmers and CIGs on TIMPS
- The Youth unit in the MoALD will promote suitable CSA TIMPs to schools. It will also promote the 4 K philosophy in schools.
- The KSA will develop curricula for CSA TIMPs for respective value chains for continuous training of technical staff and other stakeholders
- KALRO Centres, SDA and SDL will cascade CSA TIMPs training. KALRO will also be responsible for establishment and management of research-led demos, sending out SMS advisories and digital TIMPs.

The approach also highlights some of the pre-requites necessary for farmers to adopt CSA TIMPs and the outcomes that will result from the adoption of TIMPs as well as the expected impact



KALRO-Kenya Agricultural and Livestock Research Organization
AIRC-Agricultural Information Resource Centre
SDA- State Department for Agriculture
SDL- State Department for Livestock
KSA-Kenya School of Agriculture
Youth Unit -4K unit

Figure 1. Hub and spoke approach for dissemination and adoption of CSA Technologies, Innovations and Management Practices (TIMPs)

3.2 TIMPs Dissemination Arrangements

3.2.1 TIMPs training of national and county level Subject Matter Specialists (SMSs, RELOs) - Tier 1

The national and Tier 1 ToTs will be coordinated and facilitated by the NPCU.

The implementation arrangements to conduct TIMPs training will be as follows;

- KALRO will train national and county level SMSs on TIMPs for priority agricultural value chains.
- The project will conduct at least one training for each selected value chain for each county
- Each training will on average take 5-6 days.
- The preferred training sites are the research-led TIMPs demonstration sites at KALRO Centres, government institutions (ATCs, KALRO, KSA, Training Institutions, Universities) or on-farm at a central location in the county
- The training will be conducted, preferably before the start of the cropping season/production cycle of the respective agricultural value chains during the first year of the project

- The expected output of the training will be; number of ToTs trained, number & types of TIMPS trained on, duration of training, training program for the next level of training to be cascaded and its curriculum.

3.2.2 TIMPs training of sub-county and ward agricultural officers, livestock production officers (sub county & ward) and Agripreneurs - Tier 2

The implementation arrangements to conduct TIMPs training will be as follows:

- The respective CPCUs together with the trained ToT team and BAs for the selected value chains will organize the TIMPs training for SCTTs, WTTs and agripreneurs
- The CPCU will select/identify the SCTTs and agripreneurs who will undergo the TIMPs for each of the selected agricultural value chain
- The project will conduct at least one training for each selected value chain.
- In addition to the specific value chain based TIMPs training, networking skills and other county specific marketing issues (Agripreneurs, FPOs, SACCOs and financial institutions, etc. will be incorporated in the training program)
- The duration for each value chain specific TIMPs training for SCTTs, WTTs and Agripreneurs will take on average 5-6 days.
- Classroom based training with practical sessions and occasional field visits will be employed to the ratio of; class to practical training of 40:60 respectively.
- Agricultural Training Centers (ATCs) will be the preferred training venues
- The TIMPs trainings should begin at or just before the beginning of the cropping season of the respective agricultural value chains.
- The expected output of the training will be number of SCTTs, WTTs and Agripreneurs trained; number, types of TIMPS trained on and duration of training, training program for subsequent cadre of trainings and its attendant activity plan.
- KALRO, NPCU, Kenya School of Agriculture, AIRC, ATDCs and state departments will technically backstop and monitor the training of SCTTs, WTTs and Agripreneurs.

3.2.3 Lead farmer's extension handbook

Preparation of a lead farmer's extension handbook (Audio, visual and digital) will be done. The handbook will be used as a reference material during dissemination of TIMPs by Lead farmers.

3.2.4 TIMPs training for lead farmers - Tier 3

The following implementation arrangements will be followed in conducting TIMPs training for lead farmers;

- Trained SCTTs, WTTs, and Agripreneurs with support of CPCUs will organize the training of lead farmers on TIMPs.
- The SCTTs, WTTs and Agripreneurs with support of CPCUs will select/identify the lead Farmers and P/Matrons (4K) who will undergo training on TIMPs for each of the selected value chains.
- At least one training shall be conducted for each selected value chain.
- In addition to the specific TIMPs training, the training will also include networking skills, value chain and specific marketing issues
- The duration of each value chain specific TIMPs training for lead farmers will be on average 4-5 days.
- Classroom based training with practical sessions and occasional field visits will be adopted. The ratio of class: practical training should be 30:70.
- Agricultural Training Centers (ATC) will be the preferred training venues.
- The training will be conducted at the beginning or just before the beginning of the cropping season or production cycle of the respective agricultural value chains.
- The output of the training will be; number of lead farmers trained; number, types of TIMPs trained on and duration of training, training program for subsequent CIGs/VMGs training complete with its activity plan.
- CPCUs will technically backstop and monitor the lead farmers training.

3.2.5 TIMPs training for CIGs/VMGs members - Tier 4

- The trained Agripreneurs and Lead Farmers will cascade TIMPs training to CIGs / VMGs based on the activity /training plans developed.
- Lead farmers with support of SCTT, WTTs and Agripreneurs will organize the training of fellow farmers on TIMPs in their respective CIGs/VMGs.
- All members of a CIG/VMG will be trained on TIMPs of their respective value chains.
- The duration of TIMPs training will depend on the value chain selected. Ideally, for crop-based value chains, it should be season long. For livestock-based value chains, the TIMPs training for fellow farmers will be season long/production cycle long duration
- The training methodology to be adopted is that of learning by doing and learner led study

- The preferred training venues will be FFBS and PFBS learning fields/PTD plots
- Lead farmers will use FFBS/PFBS learning fields, demonstration plots, individual, farm visits and field days to train their members of the CIGs/VMGs
- The expected output of the CIG/VMG training will be the number of farmers trained disaggregated by gender; number and types of TIMPs the farmers were trained on and duration of training.
- SCTTs and WTTs will technically backstop the training of CIGs/VMGs on TIMPs by Agripreneurs and Lead farmers.

3.2.6 TIMPs training for 4-K Clubs – Tier 4

- The State Department of Agriculture (Youth Unit) will liaise with Ministry of Education to identify schools from which teachers will be trained as 4-K Club TOTs
- Identified schools will then nominate Patrons and Matrons who have established 4-K Clubs. Patrons and Matrons of existing 4-K Clubs may also be targeted for training
- County and Subcounty SMSs will train nominated Patrons and Matrons of 4-K Clubs on TIMPs
- Trained 4-K Club Patrons and Matrons will further train 4-K Clubs and incorporated TIMPs in their 4-K Club projects
- County and Subcounty SMSs will provide periodic backstopping to 4-K Clubs

The steps in establishing 4-K clubs are outlined in annex 4.

3.2.6.1 4-K Clubs TOT Training

- The State Department of Agriculture (Youth Unit) will train County, Subcounty SMSs and Ward Officers as 4-K Club TOTs as per the 4-K Clubs Programme TOT Manual, 2024 to be incorporated in the TIMPs training at the National level.

3.3 TIMPs Dissemination Process

The TIMPs dissemination will adopt a hybrid, participatory approach which integrates the Farmer/Pastoral Business Field School (F/PBFS) model with the lead farmer extension model to ensure more effective outreach to Common Interest Groups (CIGs) aligned with key value chains. Lead Farmers will provide support to fellow farmers in specific TIMPs thereby creating a critical mass of adopters in designated locations.

This strategy will leverage the over 1600 CSA TIMPs already developed by KALRO and other agencies. These CSA TIMPs and seed systems will empower farmers to boost productivity,

enhance resilience to climate change, and lower greenhouse gas emissions from agricultural activities.

3.3.1 Cascading training on TIMPs

The project will use the four-tier training model (Figure 1) to cascade the training on TIMPs. The county teams shall be trained by KALRO as Trainers (ToTs) on the respective TIMPs for the prioritized Value Chains in each county (Tier 1). The county trainers will train the SCTTs, WTTs and agripreneurs on TIMPs (Tier 2) while the SCTTs, WTTs and agripreneurs will train lead farmers on TIMPS (Tier3). The Lead farmers together with WTTs and agripreneurs will train the CIGs/VMGs member farmers on the respective TIMPs using the demo sites and FFBS learning fields (Tier 4). The KALRO, state departments and county technical teams shall provide continuous mentoring and coaching of tier 2 to 4 trainers on need basis. Backstopping for tier 2, 3, & 4 trainers will be conducted during each training by either KALRO, County teams or the SCTT depending on the training tier. At level four, the Lead farmers will train the CIGs / VMGs member farmers on the respective TIMPs using the demo sites and FFBS learning fields (Tier 4) with support from WTTs and agripreneurs.

The project will conduct refresher training for Tier 2, 3 and 4 trainers at least once a year in order to refresh and further enhance their knowledge and skills on TIMPs. At Tier 1, Tier 2 and Tier 3 trainings, participants will prepare work plans and budgets on how they will execute the next / subsequent level of trainings keeping in mind the targeted participants. The training programs for TIMPs in tier 4 will be packaged and structured by AIRC to ensure effective knowledge dissemination and practical implementation.

In figure 2, the model defines the target participants and number of people to be trained at each level of training.

3.3.2 Roll out of TIMPs through F/PBFS

3.3.2.1 Training of FBFS Facilitators (ToF)

The team of County Subject Matter Specialists (SMSs) trained as Trainers of Trainers (ToTs) in TIMPs, along with the select group of Agripreneurs, lead farmers, Sub County technical staffs and ward extension officers who will have completed TIMPs training, will take part in a 21-day Training of Facilitators (ToF) program on the F/PBFS methodology in each county facilitated by an FFS master trainers. Upon successful completion of the 21-day training, participants will graduate as Farmer/Pastoral Business Field School (F/PBFS) facilitators.

The trainers will be selected from a pool of previously trained and experienced F/PBFS facilitators, operating under the supervision of F/PBFS master trainers.

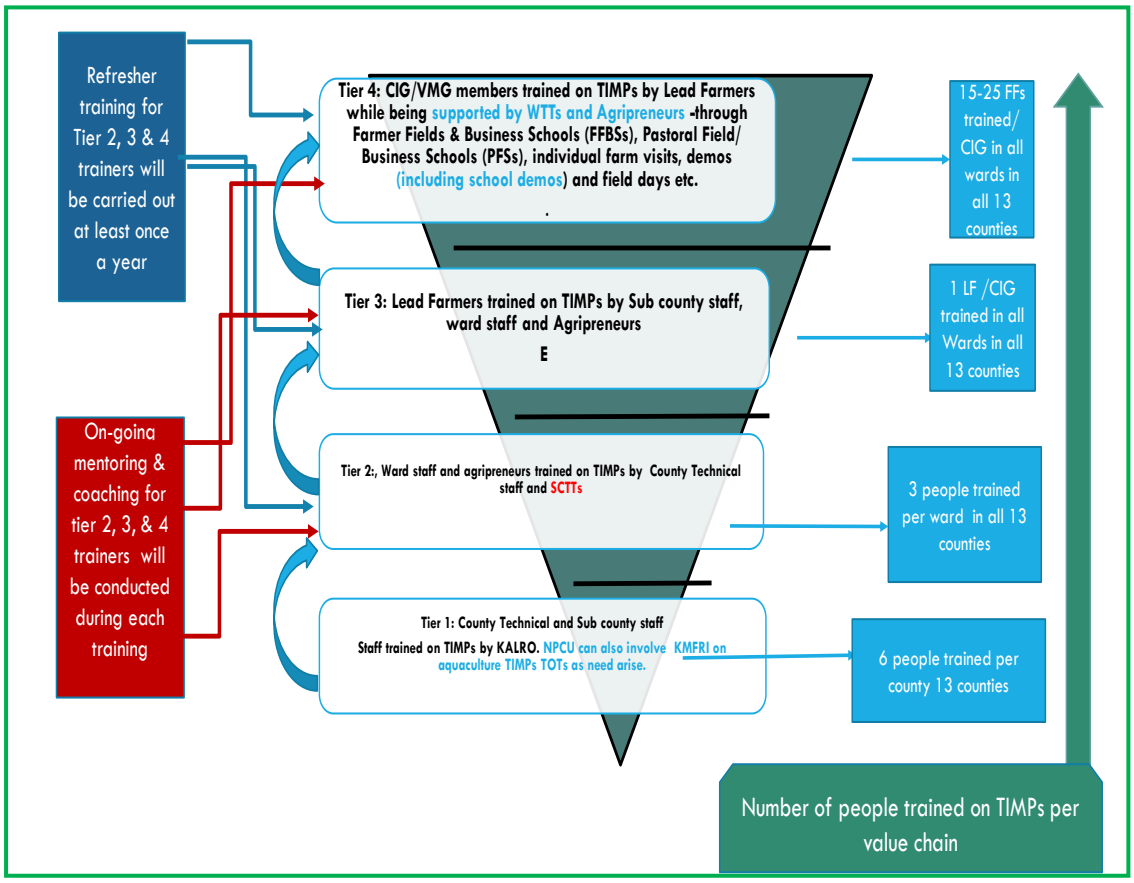


Figure 2 Model for cascading training on TIMPs.

3.3.2.2 Establishing the FBFS Groups

Value chain-based F/PBFS will be established in each ward, with the number of F/PBFS schools based on the prioritized value chains (up to five per ward). Each F/PBFS will consist of 30 participants, including 15-20 members from the host Common Interest Group (CIG) and 10 lead farmers selected from neighboring CIGs within the relevant value chains. These ward-based F/PBFS will serve as learning hubs where lead farmers can enhance their skills in critical areas of priority crop and livestock value chains over a four-month period. This training plays a crucial role for Lead Farmers, ensuring they develop the right mindset and attitude to navigate the challenges and demands of the approach. It equips them with essential facilitation skills, the ability to create actionable implementation plans, and the capacity to effectively transfer technical knowledge to fellow farmers. Once these skills are acquired, Lead Farmers will be well-prepared to facilitate the continuous transfer of knowledge and skills to Follower Farmers, driving the adoption of best practices through the Lead Farmer approach.

Figure 2 shows the dissemination of TIMPs through FFBS/PFBSs.

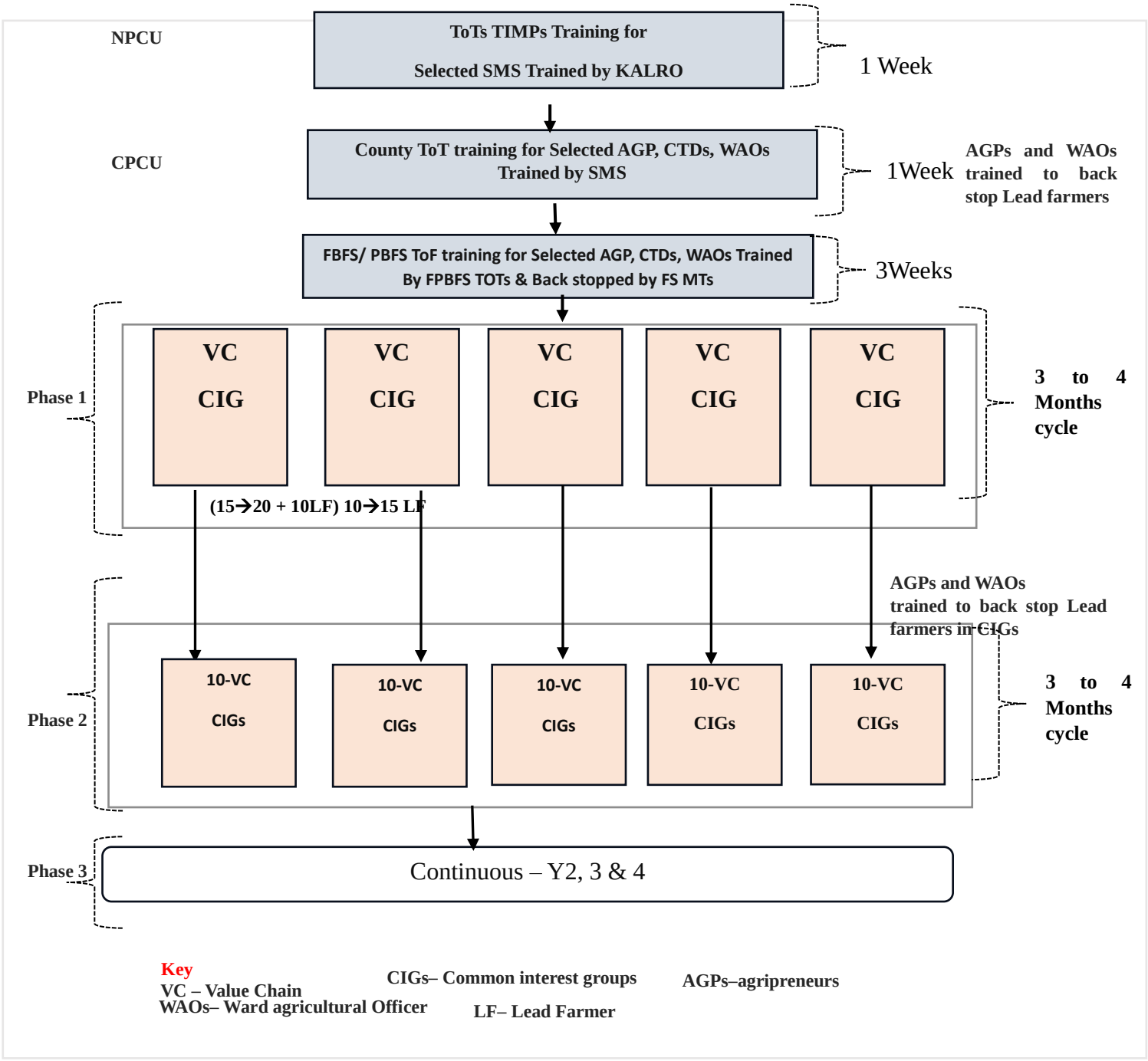


Figure 3: TIMPs Dissemination Through FFBS/PFBSs

3.4 TIMPs Dissemination Using Lead Farmers

The approach empowers farmers as catalysts for change, equipping them to share their knowledge and skills within their communities. Central to this approach is the Lead Farmer (LF), who mentors a group of Follower Farmers (FF) to encourage the adoption of recommended TIMPs. The approach begins with the mobilization, onboarding, and intensive training of LFs. The Lead Farmers will be trained by AGPs and Ward Extension Officers (Figure 3).

Each LF is responsible for engaging with 20-30 farmers from Common Interest Groups (CIGs). Lead Farmers will be facilitated to conduct visits to their assigned FFs. The extension system is designed to align with cropping seasons, with most training conducted during the off-peak agricultural periods. For livestock based value chains, training can be conducted anytime but taking into consideration seasonality's and production cycles of specific livestock. A dedicated team of field technical staff from ward and sub-county levels provides backstopping, regularly assessing and monitoring the progress of TIMP adoption and best practices among follower farmers.

In addition to training, lead farmers play a crucial role in facilitating market linkages through aggregation and promoting the federation of Common Interest Groups (CIGs) into Farmer Producer organizations (FPOs) and Savings and Credit Cooperatives (SACCOs).

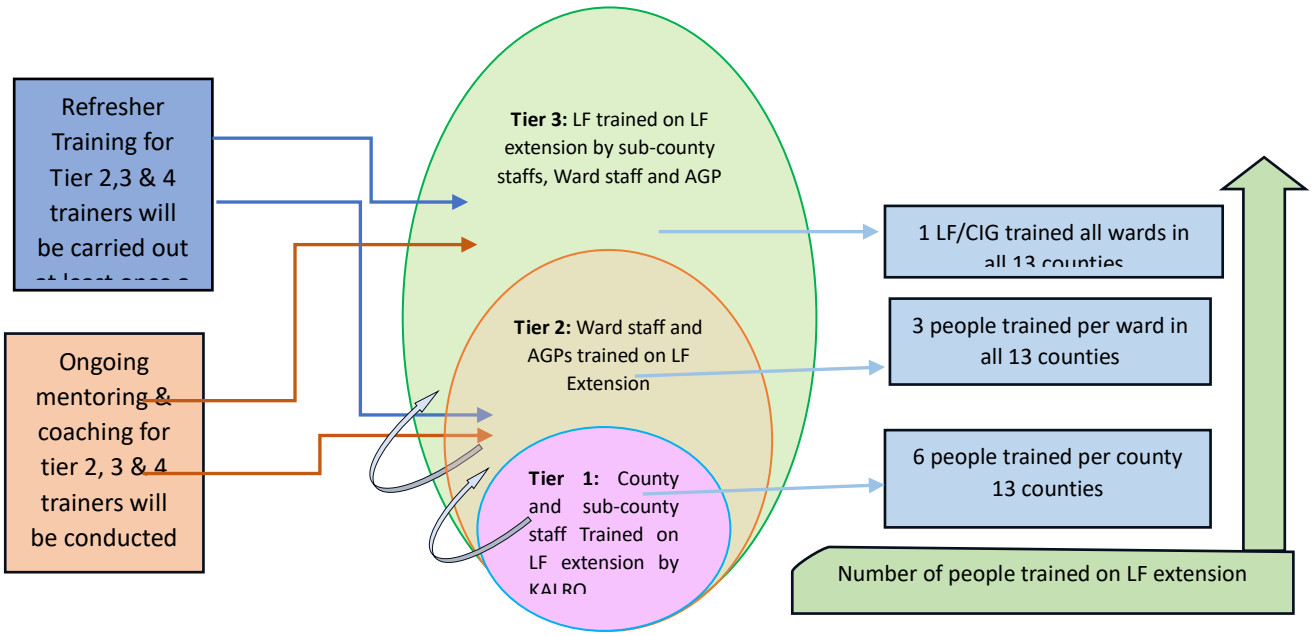


Figure 4. Training model Lead Farmer Extension Approach

3.5 TIMPs Dissemination Through Demonstrations

3.5.1 Institutional Demonstrations

NPCU in collaboration with other stakeholders including KALRO and other NARS will establish the Research-Led demos to showcase a range of TIMPs. KALRO in consultation with County Technical Departments and Institutions will develop proposals and designs of the demonstrations and present them to the NPCU for concurrence.

At least four Research Managed Demonstrations will be established per county depending on the practicability of siting a demonstration within a county and availability of resources. In certain instances, particularly for the large tree crop and livestock TIMPs, a demonstration will serve several counties or a region. The cost for establishing a research managed demonstration will be determined by the value chain and scope of TIMPs to be demonstrated on.

3.5.1.1 4-K Club Demonstrations

NPCU will coordinate and facilitate the State Department for Agriculture (Youth Unit) to establish demonstration plots in 4-K Clubs in selected schools and account for all resources used. The state Department of Agriculture, together with KALRO, county teams and other multi-sectoral stakeholders will establish and operationalize these demos. These demonstrations will inculcate positive attitudes in agriculture among learners with expanded beneficiaries being parents and the community living around the schools.

3.5.2 CIG Demonstrations

To facilitate the learning at F/PBFS at the CIG level, at least 5 small scale (farmer led) demonstrations will be established in each ward (one demo per value chain where possible).

The County (CAEO) in consultation with RELOs, WTS will establish the "farmer led" demos that comprise one to four TIMPs under farmer management and farm resources at CIG level. The TIMPs will be a sub-set of those chosen by CIGs.

The CIGs will develop a proposal (Annex 5) with support from the county teams. The proposal will be vetted by the CDDC through the Sub-CTAC and forwarded to CPCU. The CPCU will present to CTAC and CPSC for vetting and approval. CPCU will forward CTAC and CPSC minutes to NPCU for concurrence.

CHAPTER 4 MONITORING AND EVALUATION FRAMEWORK

The objective of this framework is to track the implementation progress, assess the effectiveness of activities, and ensure the sustainable impact of the TIMPs dissemination model for increased adoption.

4.1 Key Performance Indicators (KPIs)

i. Training and Capacity Building:

- Climate Smart agriculture technologies and practices transferred to extension services or producer organizations with programme support (Number of which –gender sensitive technologies and practices)
- Number of Subject Matter Specialists (SMSs), ToTs, ward officers and lead farmers trained (what of agrepreneurs and matrons and 4 k…)
- Number of TIMPs-specific material developed and produced
- Number of TIMPs implementation documentaries produced
- Percentage of trained participants who meet competency standards.
- Number of Farmer/Pastoral Business Field Schools (F/PBFS) established.

ii. Adoption of TIMPs:

- Number of farmers adopting at least one TIMP
- Percentage increase in production in targeted value chains.
- Number of climate-smart practices adopted by Common Interest Groups (CIGs).

iii. Community Engagement and Participation:

- Number of community CIGs meetings and engagement sessions held.
- Percentage attendance and participation rates in F/PBFS sessions.
- Number of feedback and concerns addressed.

iv. Resource Utilization:

- Availability and allocation of resources (training materials, facilities, funding).
- Percentage of planned vs. actual resource use.

v. Market Linkages, Financial agribusiness Impact:

- Number of Farmer Producer Organizations (FPOs) and SACCOs formed.
- Increase in farmer income through market access and value addition.

- Volume and value of products aggregated and sold through FPOs

vi. Sustainability and Scaling:

- Number of new wards/counties adopting the F/PBFS model.
- Number of second-generation F/PBFS established
- Integration of F/PBFS into local agricultural extension services.

4.2 Data Collection Methods

i. *Surveys and Questionnaires*: Regular surveys for SMSs, lead farmers, and participating farmers will be undertaken to gather quantitative and qualitative data on training effectiveness, TIMPs adoption, and challenges faced.
ii. *Field Visits*: Routine visits to F/PBFS sites to observe implementation, engage with participants, and verification.
iii. *Focus Group Discussions (FGDs)*: Engage community members and lead farmers to collect feedback and insights on dissemination strategy effectiveness and areas of improvement.

4.3 Reporting

i. *Monitoring & Evaluation (M&E) Reports*: Monthly, Quarterly and annual reports and documentaries to document progress, challenges, and lessons learned.

1. Roles and Responsibilities in monitoring

i. **Monitoring and evaluation Thematic lead**: Oversee overall monitoring activities, ensure data collection, Analyze collected data and generate insights for program improvement and reporting
ii. **Field Officers**: Conduct field visits, collect data, and engage with farmers.
iii. **Stakeholders (KALRO, KSA, AIRC, ATDCs, MoALD and County technical departments)**: Review progress reports, provide feedback, and support adjustments to the implementation plan.

2. Frequency of Monitoring

i. *Monthly*: Collection of data on training, TIMP adoption, and resource use.
ii. *Quarterly*: Comprehensive M&E reporting, including field visit findings and FGD outcomes.
iii. *Annually*: Evaluation of overall program impact, adjustments to the strategy, and planning for scale-up.

3. Feedback and Adaptation

i. Regular feedback sessions with stakeholders and communities will be held to discuss findings of the M&E.
ii. Monitoring data will be used to make informed adjustments to training, resource allocation, and outreach strategies.
iii. Changes to the TIMPs dissemination strategy will recommended based on lessons learned to improve the effectiveness and scalability of the program.

4.4 Evaluation Framework

Process Evaluation: Assess the effectiveness of implementation processes, including training, resource distribution, and community engagement.

Methods: Review of process documentation, interviews with implementers and participants, focus group discussions (FGDs).

Frequency: Mid-term and end-of-year evaluations.

Outcome Evaluation:

i. Measure the short-term and intermediate outcomes, such as changes in farmer knowledge, behavior, and TIMP adoption rates.
ii. Pre- and post-intervention surveys, case studies, and field assessments.
iii. Annual evaluation.

4.5 Impact Evaluation:

i. Assess the long-term impacts on productivity, climate resilience, and community livelihoods.
ii. Longitudinal studies, comparison with baseline data, impact assessment reports.
iii. End-of-program evaluation or every four years.
iv. Documentation of success stories.

4.6 Key Evaluation Questions:

i. To what extent have the training and capacity-building activities led to the adoption of TIMPs?
ii. How effectively are resources being used to support the program's objectives?
iii. What are the measurable impacts of the program on productivity and climate resilience?
iv. How sustainable are the market linkages and financial benefits established through the program?

4.7 Feedback Mechanism and Adaptation

i. **Feedback Collection**: Regular meetings with stakeholders, community feedback sessions, and suggestion boxes.
ii. **Data-Driven Adjustments**: Use evaluation findings to make evidence-based adjustments to the implementation plan, training content, and resource allocation.
iii. **Continuous Improvement**: Implement changes based on feedback and evaluation results to enhance program effectiveness and scalability.

ANNEXES

Annex 1. Criteria for Selecting a Lead Famer

The selected farmers will also meet the following basic criteria:

i. Must be a member of CIG.
ii. Be a resident of the village.
iii. Have a formal education, be able to read and write.
iv. Be accessible by other members and willing to offer their farms as a learning ground to train others.
v. Lead farmer should be socially acceptable to members.
vi. Lead farmers should show willingness, ability to disseminate new innovations and knowledge to other farmers.
vii. Lead farmer should be comparatively successful in the enterprise of interest.
viii. Be a good communicator with good facilitation skills.

Annex 2. Role of the lead farmer

i. Developing his / her enterprise/farm to be a learning platform for group members.
ii. Get training from public extension officers, service providers, KALRO and Digital Agricultural Technologies (DAT) Cohorts.
iii. Identification of training needs for CIGs/VMGs.
iv. Disseminating extension advisory services to the other farmers within the enterprise.
v. Organizing VC related extension demonstrations and meetings.
vi. Identification of production and marketing bottlenecks within the value chain.
vii. Contact or link person between the CIG/VMG and the POs, CDDCs and other stakeholders, in collaboration with the chairpersons of CIGs/VMGs.
i. Reporting progress of TIMPs implementation/progress to Group/CDDC/CPCU/CTDs and other relevant stakeholders.
ii. Reporting and disseminating project messages to CIG members and other VC beneficiaries.

Annex 3. Criteria for selection of FFBS groups, participants, learning/meeting sites and experimental sites / host farms

a) FFBS (CIG) group selection

i. Organized community (CIG / VMG) that is registered, dedicated / committed and willing
ii. Membership 25 – 30 persons
iii. Well trained and available facilitators on TIMPs and FFBS facilitation
iv. Well defined priority problem
v. Clear understanding of the concept and procedure by all stakeholders
vi. Support and goodwill of the authorities at various levels
vii. Availability of appropriate technology
viii. Adequate resources and logical support
ix. Proper identification of site / area
x. Proper identification and selection of participants
xi. Flexible and dynamic farmer group that is well organized and structured
xii. Farmers with common interest
xiii. Proper and guaranteed supervision, monitoring and evaluation of the activities

b) Criteria for selection of FFBS participants / members

i. Common interest among participants (focal enterprise / value chain) e.g. fodder production
ii. The enterprise is the main source of livelihood
iii. Participant is a decision maker in his or her household

viii. All participants are from the same socio-economic level
ix. From the same clan and share key resources and migrate to the same areas
x. Live within a relatively short distance of the FFBS learning site (same village)
xi. There are no known conflicts between participants
xii. Must aim to attend all sessions during the FFBS learning cycle (4 – 24 months)
xiii. Must be willing to work in a team and share ideas with others including non- members
xiv. Must be willing to contribute financial, material inputs or personal time to FFBS work
xv. Must be interested in learning and not expect material benefits
xvi. At least one participant must be willing to provide a farm or field or animal for group learning and experimentation.

c) Criteria for learning / meeting site selection

i. Available through the learning cycle
ii. Must be central and accessible to group members and facilitators
iii. Democratically selected by the group members
iv. Site security should be ensured
v. Meeting place should be spacious enough to hold a group of about 30 persons,

vi. Provide shade, such under a big tree.

d) Criteria for experimental site / host farm election

i. Suitable for the focal enterprise
ii. Representative of the area
iii. Central and accessible to the FFBS members and CBF
iv. Democratically selected by FFBS members
v. Secure for the study objects and FFBS members.

Annex 4. Establishment Phases of 4-K Clubs

Phase I: Training of TOTs/Members

- Identification of schools
- Training of County, Subcounty SMSs & Ward Extension Officers as 4-K Club TOTs
- Training of 4-K Club TOTs (Patrons/Matrons)
- Training of 4-K Club Members

Phase II: Registration of 4-K Club and Members

- Win the confidence of the people
- Involve formal and informal leaders as well as key stakeholders
- Talk to the parents
- Recruit 4-K Club Members
- Organise the New 4-K Club
    - Elect Officials
    - Name the Club
    - Selection of Enterprises
    - Registration of 4-K Club and Members
- Plan Meetings
- Support Sustainability

Phase III: Establishment of 4-K Club Demonstrations

- The selection of the demonstration site will be based on a criteria that will be developed by the Youth Unit and stakeholders (selection criteria for schools, proposal development template, vetting criteria)
- FSRP will support establishment of large 4-K Club demonstrations per county
- County, Subcounty SMSs & Ward Extension Officers should give guidance to Patrons/Matrons in selection of suitable agricultural projects for the demonstration based on priority value chains for the county
- KALRO in consultation wTith County, Subcounty SMSs & Ward Extension Officers and schools (4-K Clubs) and the Youth Unit will develop a proposals and design of the demonstration and present it to NPCU for concurrence
- NPCU will recommend to NTAC for approval

Phase IV: Sustainability of 4-K Club Demonstrations

- Continuously provide capacity building on TIMPs

- Strengthen entrepreneurship, market information and linkages
- Establish partnerships with other development stakeholders
- Put in place support services including financial services, insurance etc
- Financial support for enhancing economic viability of the 4-K Club projects
- Community involvement in the demonstration project activities
- Participatory learning, monitoring and evaluation of the demonstrations

Annex 5. County Proposal Template

COUNTY PROPOSAL TEMPLATE

Basic Information	
Proposed Project Title	
Implementing County	
Implementing County Department and Partners	
Project location (ward)	
Public Participation Forum in Identification of the project	

Introduction

Project Description:

County geographical location and administrative boundaries

Background

Problem statement

Justification

Project Goal

Specific Objectives

Project description

Project Activities

S/NO.	Activities	Implementing unit	Timelines
1.			
2.			

Expected Output

Expected Outcomes

M&E plan

Project Risks and mitigation measures

S/No.	Risks	Mitigation
1.		
2.		
3.		
4.		

Targeted beneficiaries

Estimate Budget (KShs.)

1.	
2.	
Grand Totals	

Project Time Frame

Cost benefit analysis:

Impact of the project to the beneficiaries:

Long term:

Short term impacts of the proposed investments

Work plan

No.	Activity	Who will provide advise & training (Institution or person)?	Time
1.			
2.			

Chart on the implementation of the sub-project

Activity	Months	
1.		
2.		
3.		
4.		
5.		
6.		

Proposed Budget

No.	Activity	Budget Item	No.	Unit	No. of days	Unit Cost	Total Cost
1							
	Sub totals						
	Sub totals						
2							
	Sub totals						

No.	Activity	Budget Item	No.	Unit	No. of days	Unit Cost	Total Cost
A	**Sub-Totals ……**						
B	**Sub-Totals ……**						
	Grand Totals (project cost) =A+B						

List the in-kind contribution that the group will provide:

A. Labour (man-days & value)

……

……

B. Materials (type, quantity & value)

……

……

We certify that the preceding information is true.

Chairperson: …… signature …….. Date……

Secretary: …… signature …….. date……

Group member: …… signature …….. Date.

(For official use only)

Comment s by the Relevant CTD: ……...

……..

……

……..……

…… Recommended: Yes No Date of meeting: ……..……..

(Attach minutes)

Comments by the CTAC: ……..

……

……..……

……

……

Endorsed: Yes No Date of meeting: …….

(Attach minutes)

Chairman Name: …… signature: ……..

Forwarded to NPCU by CPC

Name: …….. Signature: ……..

Date: ……. Official rubber stamp:

Attachment 1 – Group membership list

No	Name	ID No	Gender M/F	Age	Contact	Signature[1]
1.						
2.						
3.						
4.						
5.						
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7.						
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